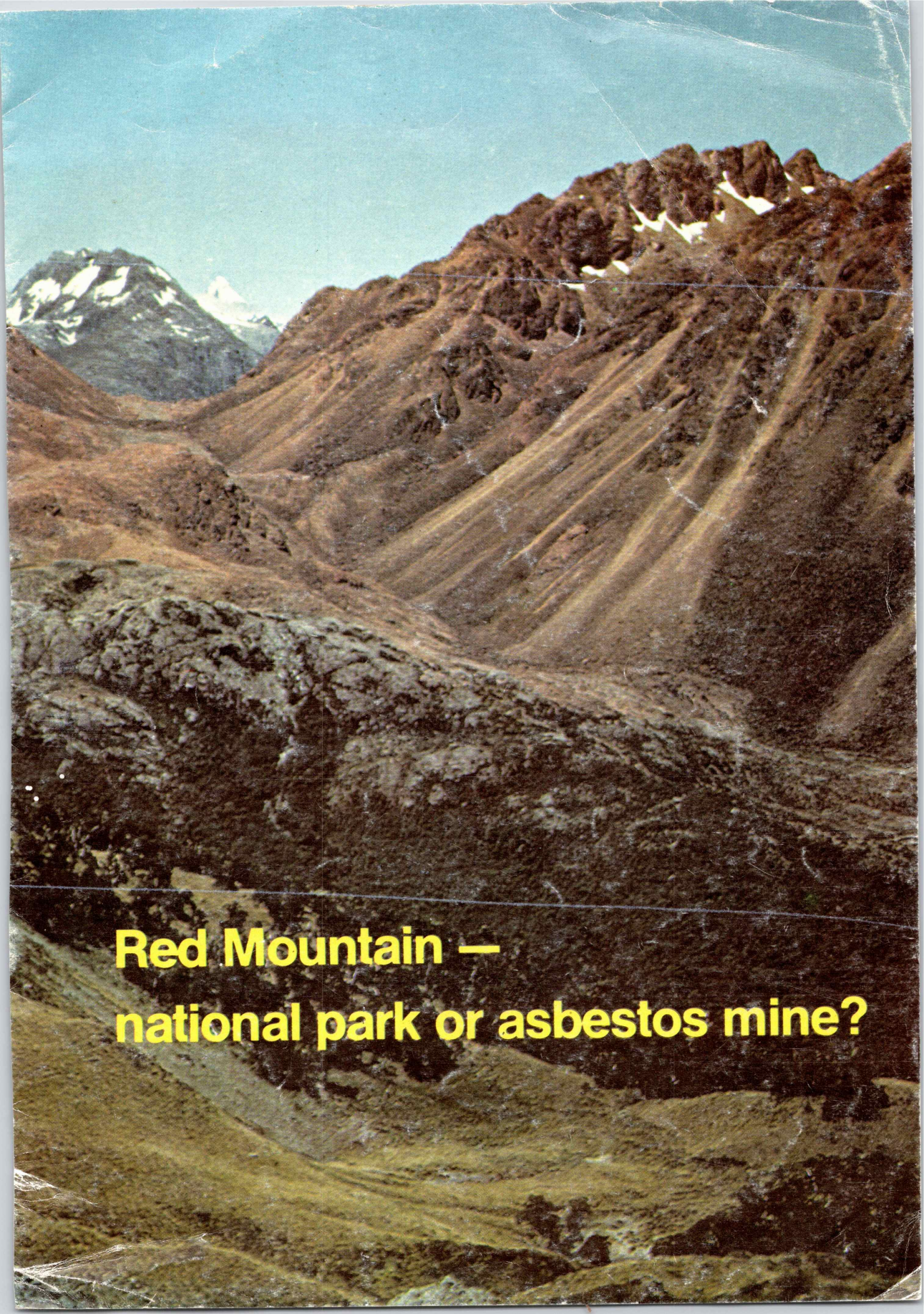




**Red Mountain —
national park or asbestos mine?**

Red Mountain — national park or asbestos mine?

"... past by the point ... of moderate height with steep red cliffs down which falls four streams of water on which account it is named Cascades Point ..."

James Cook, *Endeavour*, 17 March 1770.

"... two [of the high hills] ... were quite bare of trees or any kind of vegetables and seemed to consist of a mouldering soft stone of the colour of brick or light red ochre. About noon the country near the sea changed much for the better, appearing in broad valleys clothed with prodigious fine woods out of which came many fine streams of water, but notwithstanding the fineness of the country there was not the smallest sign of inhabitants ..."

Joseph Banks, *Endeavour*, 17 March 1770.

DEEP in South Westland, about 18 km south-west of Jackson Bay, the red cliffs of the Cascade Plateau described above by Cook still rear up above a wild coastline beaten by the Tasman Sea. These cliffs form the western boundary of one of the most interesting landscapes in New Zealand — the Red Mountain ultramafic belt. The distinctive feature of this "mineral" belt is its mountainous nature, with the blocky red screes devoid of vegetation making a striking scenic contrast with the more sombre greys of the schist peaks of the Olivine Range and the yellow tussock and green beech forest of the surrounding ranges. The ultramafic rock is rich in silicates of iron and magnesium, intruded hundreds of millions of years ago between the Alpine Fault and the associated Livingstone and Skipper Faults.

For 50 km this narrow red band, rarely wider than 5 km,

stretches from the head of the Jackson River in the north to Serpentine Saddle above the Hollyford in the south (see map). It is wild country, one of the most rugged wildernesses remaining in New Zealand — a land of gorges, waterfalls, cliffs, and glaciers. The focal point of the entire belt is the majestic bulk of Red Mountain (about 2000 m), the main feature of the Red Hills Range

By Les Molloy

between the Cascade and Pyke watersheds.

For 200 years since viewed by Cook and Banks this region has remained uninhabited, yet it has developed a mystique through the exploration of generations of prospectors, mountaineers, and hunters. Today it is literally under siege, a wilderness with outstanding scenic, scientific, and recreational values which are likely to be seriously downgraded if current pressures for development — for mining and tourism — continue.

This article attempts to describe the region, its colourful history, and its value as a scientific and recreational resource. The events leading up to recent commercial exploitation ventures are discussed and



COVER: Red Mountain (right) and the Red Hills Range, as seen from the west. The snow-covered Olivine Range is in the background and Mount Aspiring in the far distance. Les Molloy photo.

Les Molloy photo

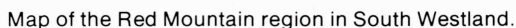
Red Mountain and the Little Red Hills, from the west.

2-60

The characteristic rust colour of the rock is from the weathering of the iron in the dunite-peridotite minerals. These rocks are enclosed in a sheath of serpentinite, another magnesium-rich rock, and therein lies the interest of generations of prospectors who have searched for noble metals such as copper, platinum, nickel, and chromium.

Vegetation

From a distance the Red Mountain region seems totally devoid of vegetation, but, as any mountaineer who has tried to reach the alpine zone will know, the lower slopes, consisting of finer rock debris, are covered with a tangled jungle of "serpentine scrub". This serpentine vegetation is characterised by hard-walled plants which have selected slow patterns of growth and are resistant to drying. Generally, the community is dominated by conifers, shrubs, and grasses. The serpentine scrub on the Cascade and Pyke sides of Red Mountain appear to fit this description with their tangled groves of stunted *Dacrydium biforme*, *D. intermedium*, *Phyllocladus* sp., *Lep-*



Fauna

No systematic studies have been made of the birdlife in the region because of its remoteness. Keas, rock wrens, and pitips have been observed on the ultramafic area, but the birdlife in the surrounding forests is naturally much richer. I have observed flocks of kakas numbering from 15 to 20 moving through the bush edge above the Red Pyke River and numerous pairs of the rare blue mountain duck (*Hymenolaimus malacorhynchos*) in the



Les Molloy photo

A geological contact zone in Simonin Creek, showing silver beech on schist (left) and ultramafic scree (right).

high mountain streams on my trips through the area during the past 12 years.

A collection of insects, primarily butterflies and moths, from the ultramafic area has been made by members of the Massey University Alpine Club and, with a botanical collection, are described by Ogden⁵.

Exploration — the romantic era

A full account of the early exploration and prospecting of the Red Hill Range and Olivine Range has been written by Galloway and Molloy⁶; so only a brief résumé of this colourful period will be given here.

The first recorded European explorers of the region were the prospectors Barrington, Simonin, and Farrell, who made a remarkable 4-month overland trip through the region in the cruel winter of 1863. Their journey is now one of New Zealand's epics of pioneer exploration, and their exact route, described in some detail in Barrington's diary (which he retained, even though he had to throw away his gold), is still

a matter of dispute among mountaineers who know the area. These three were the first of the wave of gold prospectors that moved westwards through Otago after the Gabriels Gully find of 1861.

Ill-founded settlements were established in the 1870s at Martins Bay⁷ and Jackson Bay⁸. The settlers were largely left to languish in an inhospitable environment — narrow coastal enclaves ringed by high mountains and accessible only by sea, landing from which, at best, was a hazardous operation. Incessant rain, sandflies, mosquitoes, the lack of jetty facilities, and the infertile nature of most of the forest soils

all contributed to the reduction of the two settlements to isolated outposts by the 1880s.

However, it was the resident Government Agent at Jackson Bay, Duncan Macfarlane, who first recognised the mineralised nature of the inland ultramafic intrusion during his exploration of the Jackson and Cascade Rivers in 1876.

After Macfarlane came Charles Douglas, who, in company with Gerhard Mueller, was engaged at various times between 1883 and 1886 in surveying the area. It is to Douglas and Mueller that definitive maps of the area are due; in fact it has been only very recently that we have been able to improve on the maps of the 1884-85 surveys⁹. Douglas, of course, noted several important mineralised areas, but it was not until a paper by the Government Analyst, William Skey, appeared in 1885 that the public began to prick up its ears and look towards the Red Hills with interest.

Skey's paper was on the distribution of a new nickel-iron alloy (awaruite) in samples of rocks sent to him by Duncan Macfarlane. Details of the occurrence of the new material and the rock from which it was derived were sought by Professor Ulrich, of the University of Otago School of Mines. In 1886 two of Ulrich's students, Henderson and Butement, submitted to him a small collection of rocks obtained while they were exploring from the head of Lake Wakatipu, across the dividing range, through the Red Hills district, and down to the West Coast. They spent several weeks exploring the wild, inhospitable region of the Red Mountain, an enterprise made possible only by the fact that at the time a well-equipped party of gold prospectors were camping on the Red Hill.

It therefore became impor-

The author

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Les Molloy photo

tant to have available more detailed information on the geology of the country in which the mineral had been found, and to that end Sir James Hector, of the Geological Survey, instructed James Park in 1886 to examine and report on the geology of the country between the Dart Valley and Jackson Bay. As a result of Park's extensive report the prospecting interest in the region changed from gold to minerals.

The mineral wealth awaiting the adventurous prospector in the Red Hills was widely discussed in the local press of the time, and several well-equipped expeditions set out from Dunedin bound for the new Eldorado. The most interesting of these was a series of expeditions conducted by Robert Paulin, of Dunedin. Paulin was an attractive character with a great flair for original exploration and he made his first visit to the area in 1875, when he walked overland from Lake Wakatipu to Big Bay with the prospector Andrew Williamson. When Paulin's main expedition left Dunedin for the West Coast in 1886 he expected to be away for 6 months; however, his explorations lasted for 5 years, during which the mountains between the Pyke and the

Arawata Rivers were thoroughly investigated.

After the accidental death of Paulin in 1895 interest in the region lapsed. Save for the legendary endeavours of Arawata Bill and his fruitless quest for the "lost ruby mine" during the early part of this century, the region had now generated a different interest: the wilderness became a challenge to the increasing number of young people interested in exploration associated with mountaineering. Throughout the 1930s and 1940s the *New Zealand Alpine Journal* carried many interesting articles on the exploits of men like Holloway and Whitehead; their work of mapping and photographing was built on in the ensuing 25 years, eventually culminating in the formation of the Mount Aspiring National Park in 1965. A major part was played in the establishment of this, the most recent of our 10 national parks, by the New Zealand Alpine Club and the Federated Mountain Clubs of New Zealand (F.M.C.).

Both organisations had urged the creation of the park for a decade and had patiently assembled a well-documented case which ensured the incorporation of most of the Olivine country at the head of the

Red Mountain (right) and the Olivine Range (left), from the north.

Arawata River. However, the Red Mountain ultramafic belt and the Pyke, Cascade, and Jackson valleys were specifically excluded on the recommendation of a group of high-level Government departmental officials in Wellington

Upper Barrier Flats and the Little Red Hills, from the slopes of Mount Ark, on the western boundary of Mount Aspiring National Park.

Les Molloy photo



— because of the possible mineral potential of the belt. As the common phraseology goes: “We must not dilute our national park standards by including areas which society may one day wish to put to practical use.”

My own interest in the region was stimulated by reading the accounts of these early explorers. Enough of the wilderness character remained for me to be fortunate enough to play a part in the last exploratory-mapping phase during the 1960s.

By comparing the maps and photographs of these exploring mountaineers with some “long-lost” maps of Charlie Douglas that we uncovered in Hokitika, we were able to reconcile the modern knowledge of the complex topography of the region with his maps and nomenclature set down 80 years earlier⁶. There is something sad about this process, however, since the romantic challenge of such wilderness is greatly diminished when the unknown is charted and “terra incognita” gives up its topographical secrets. Fortunately, the danger of over-exposure of the region has been recognised by the New Zealand Alpine Club, which decided to include no specific route guides on the Olivine in the latest edition of *Moir's Guidebook*. The physical challenge of this remote and rugged area remains, however, and it is this aspect of wilderness which I believe is so important to preserve. Future generations also have a right to meet this landscape in the same primitive state experienced by explorers and mountaineers over the past century.

“The Poseidon adventure”

The 1960s were the decade of the Australian “mining

speculation boom”. Almost inevitably, nickel would be “discovered” in New Zealand. Curiously enough, however, it was the claim of “large quantities of tin” discovered by Nickel Spoon Mining Co. Ltd (*Evening Post*, 21 January 1970) that drew the attention of the public once again to the South Westland ultramafics. The Auckland-based company had been incorporated in December 1968, and its 28 000-hectare prospect was based on the Gorge, Jerry, and Spoon Rivers — all draining the glacial outwash country to the west of Red Mountain.

The company's prospectus was widely criticised for its extravagant claims without any documentation of assay and geochemical analysis. But unrestrained enthusiasm was evident in the words of the company's manager:

“... Nickel Spoon Mining Co. Ltd has succeeded in gaining a foothold in the almost hitherto unexplored territory among the fastnesses of South Westland's and North-west Otago's difficult mineral rich terrain.”

The Nickel Spoon prospect was all within State Forest 1 (“Cascade”) of Westland Conservancy, and in 1969 despite concern expressed by member clubs of the F.M.C. the company received New Zealand Forest Service permission to bulldoze 40 miles from Jackson Bay to the Gorge River. Airstrips were formed and huts erected, and the bulldozer was used to scoop sediment out of the rivers.

By May 1970 the company was claiming a sizeable nickel strike (*Evening Post*, 2 June 1970). Its unlisted shares rocketed, yet nothing more was heard of the “large quantities of tin”. By October the company was claiming that it

proposed soon to start “sluicing operations by treating an initial 3000 yards a day ...” (*Dominion*, 24 October 1970) on the basis of “geophysical work done by bulldozer, drilling, and blasting”.

The position of the Forest Service in this matter is interesting, since it foreshadows a much more serious example of departmental laxity in the asbestos controversy which developed in 1973. In June 1969 the Forest Service replied to the Massey University Alpine Club's queries by stating that “helicopter transport will now largely be used for the ferrying of prospecting equipment”. However, “some limited development of the existing track system may yet eventuate”. It happened that the 40 miles of bulldozing constituted this “limited development”! To further protestations of concern from clubs the Director-General of Forests rather lamely admitted (7 July 1971): “Although it appears some tracking may have been formed without Forest Service approval, inspections have been made and no significant damage has been caused... Where appropriate, discussions will be held covering future operations and plans for mining activities on State forests.”⁹

In June 1971 Nickel Spoon Mining Co. Ltd won a claim for \$5,000 and \$2,000 damages against a Lower Hutt clerk who falsely represented himself as a geologist and was employed by the company in November 1970 to make a geological survey of the prospect.

About this period (April 1971) another mining company with a romantic name — Cascade Exploration Co. Ltd — burst on to the scene with a glossy prospectus which the *New Zealand Economist* (1 May 1971) termed “grossly in-

adequate". The connection with Nickel Spoon was obvious from reading the list of chairman and vendors; their office was across the corridor from that of Nickel Spoon.

The *Economist* pointed out that the syndicate of vendors had spent only \$25,000 on the prospect, yet were to be issued with \$200,000 nominal value in shares! Their prospect was the Cascade Plateau (see map), a huge lateral moraine on the north bank of the Cascade River, which they claimed to be a "natural stockpile of iron oxides", yet geochemical data were almost non-existent in the prospectus. The following month they announced that "assaying" was "... about to begin" (*Press*, Christchurch, 6 May 1971).

Shortly afterwards the Mines Department annual report was tabled in Parliament and it expressed concern about "premature public statements relating to mineral discoveries" (*Otago Daily Times*, 24 July 1971) by some companies active in New Zealand.

Late in 1971 Nickel Spoon Mining Co. Ltd found it expedient to change its name to South Westland Minerals Ltd. The company caused another minor flurry when it announced that it would shortly begin dredging in the Gorge River area (*Dominion*, 16 May 1972), not for tin or nickel, but now for gold! A further note, bordering on the ludicrous, was the aerial sighting of "an important cobalt deposit in South Westland ... between the Spoon and Hope Rivers"

(*Dominion*, 28 September 1972) by the former field manager of Nickel Spoon. This gentleman claimed that "he



Les Molloy photo

Red Mountain, from Red Hills Range. Across Cascade valley is the snow-covered Olivine Range in the background.

had noticed the unmistakable peach-blossom pink colour of the cobalt bloom ... about 2 years ago"!

Perhaps the final note on South Westland Minerals was a newspaper report (*N.Z. Truth*, 25 September 1973) of its debacle of an annual meeting when it was announced that most of the directors had resigned or could not be found, the company was in debt, and the books had not been audited. It was suggested that the fraud squad be asked to investigate the company's affairs.

"The Poseidon adventure" seemed at a close. Many members of the public had learnt a bitter lesson, and conservationists took some comfort in that the vigorous regrowth and South Westland climate would soon erase the scars, the rusting bulldozer, and the huts.

The multinationals move in

With none of the extravagance of the New Zealand speculators, the Australian-based American mining giant, Kennecott Exploration (Australia) Pty. Ltd, had moved into the Red Mountain ultramafic region proper in 1968 and had quietly prospected for 2 years with a well-qualified and well-equipped team. It discovered asbestos in the Pyke valley, but claimed that until fully proven it was "nothing to get excited about" (*Evening Post*, 25 January 1972).

Because of parent company retrenchment in the United States for anti-pollution expenses and in South America for political reasons Kennecott withdrew, temporarily, in February 1972 (*Otago Daily Times*, 23 February 1972). In the spring of 1973 the company returned, in concert with Casiar Asbestos Corporation of Canada and Lime and Marble



Pete Lusk photo

A mining syndicate's bulldozed route between Big Bay and the upper Pyke valley (January 1974).

Ltd of Nelson (*Evening Star*, 10 August 1973).

For the next 5 months two large bulldozers pulling steel sledges supporting a cook-house, sleeping accommodation, drilling equipment, fuel drums, and the like carved a swath for 100 km through the forests of the Jackson, Cascade, and Hope valleys to Barn Bay; thence south to Big Bay, where they turned inland and formed a "road" up to 20 m wide for the 12 km to the Pyke River (*Christchurch Star*, 9 March 1974).

It was the syndicate's stated intention to build an airstrip "large enough for Bristol Freighters to land" on the beautiful upper Pyke River flats, but by this stage even Government departments were becoming concerned at the mounting public objections expressed by the environmental movement, including scientific societies, recreational clubs, and the Royal Forest and Bird Protection Society.

At the urging of the F.M.C. the Nature Conservation Council arranged for senior Government officials to inspect by helicopter on 23 August 1971 the Red Mountain region and the bulldozer damage. The council subsequently also expressed concern about the attempts of the Westland County Council to push a road up the Jackson valley to the Cascade valley, with financial assistance of the Minister of Works through the "back-country" roads vote.

The mining consortium bulldozers followed the roughly formed county road, but cut a new route with considerable scarring across Martyr Saddle; down Martyr Spur (an ultramafic moraine) into the Cascade valley the vegetation was stripped from large areas as if a little prospecting had been attempted en route.

The bulldozers halted at Durward Creek in the upper Pyke, only 8 km from the prospect. The reason was difficult terrain, lack of time before the end of the summer field season, cost, and the public outcry. Certainly they were not ordered to stop because of concern from the Forest Service or any other Government department. The syndicate had to use helicopters to carry equipment to the Little Red Hills and it eventually set up a village of huts in Red Stream (a tributary of the Barrier River) and drove three adits into the side of Little Red Hill to take samples of asbestos for assay. A fuller description of this phase of the mining saga has been given by Pete Lusk in *Canta* (22 March 1974).

Role of Government departments

By 1974 New Zealand had a Minister for the Environment and a well-established Com-

mission for the Environment. Neither the Jackson road nor Red Hills prospecting was subjected to public environmental impact assessment or reporting. However, once it had caught up with what was happening, the commission tried to point out the need for the departments involved to tighten up considerably on their procedures.

The Mines Department issued the prospecting warrant on 23 March 1973 at Alexandra and gave permission to make an access track "to site drilling equipment", but stipulated that the width of any tracks was not to exceed 12 ft, that standing bush was not to be damaged, and that there was to be no roading in native bush areas!

Permission was gained from the Lakes and Westland County Councils for the bulldozers to follow the old bridle trail, but this was not strictly adhered to, and the councils were not concerned at this, since both had publicly expressed their enthusiasm for a Jackson-Hollyford road link for tourist purposes.

The prospect lay on unoccupied Crown land administered in benign neglect for 100 years by the Department of Lands and Survey. It seems that that department was so lacking in knowledge of the scenic, scientific, and recreational attractions of the ultramafic area that the only charitable conclusion is that it had no part in the decision to grant permission or set conditions.

Since most of the route lay through State forest, most of the blame for the damage and lack of supervision fell on the Forest Service. Once again, its head office claimed that the company had been given permission only to "walk a bulldozer to the site" by authority delegated to the Conservator of

Forests, Westland. Unfortunately, no one remembered to tell the bulldozer drivers! The Cassiar consultant, Mr D. Budinski, even alleged that no environmental restraints had been imposed en route (*Christchurch Star*, 5 January 1974).

Forest Service again expressed "great regret" at the lack of "full constraining conditions", and the Commissioner for the Environment stated that it was "acknowledged by the Forest Service ... that the tractor train ... caused damage through the operators exceeding the conditions of their permit, particularly in regard to excessive side cutting and the leaving of empty fuel drums".¹⁰ The Forest Service assurances of 1971 now had a decidedly hollow ring to them.

Federated Mountain Clubs prepared for the Minister of the Environment a comprehensive photographic record of the scenic attractions of the area and of the damage that had been done. It is believed that this evidence caused a number of departmental red faces, and inter-departmental meetings were arranged by the commission to tighten up the whole procedure, which was fast becoming a fiasco. Unfortunately, this seems to be the New Zealand experience so far; generally it takes a public outcry before the departments charged with conserving the nation's natural heritage take their responsibilities as seriously as most of us would like.

Recent prospecting

The Kennecott-Cassiar-Lime and Marble Syndicate was not very active during 1975, and Cassiar eventually withdrew. In March 1976, during this breathing space, the Commission for the Environment tried to initiate an inter-departmental resource use



Pete Lusk photo

Bulldozing on Sandrock Bluff, as seen across Browns Refuge to the south (January 1974).

study of the region. But most departments were either unwilling or unable to find the man-power and finance for the work and so this excellent proposal lapsed. The weakness of our administration of, and research into, natural resources is clear: Government seems to be continually reacting to external pressures in the deployment of its limited research effort; typical examples are the South Island beech utilisation proposals, Clutha hydro, and the South Westland and King Country land use studies.

The opportunity to undertake a major study of the Red Mountain region was allowed to pass by; however, the efforts of the New Zealand Ecological Society to obtain detailed scientific information on the ultramafic belt were realised when an 8-man D.S.I.R.-University of Otago team surveyed as much as they could of the geology, soils, and plant and insect communities for 2 weeks in January-February 1975.¹¹

In the 1976-77 summer field season the consortium returned, this time with

ASARCO (American Smelting and Refining Co.), one of the largest American mining multinationals, instead of the much smaller Cassiar Asbestos Ltd. Further sampling was carried out over a wide area; the syndicate exerted considerable pressure on the Mount Aspiring Park Board and the National Parks Authority to prospect in the small ultramafic area around Fiery Peak in the upper Olivine. This area towards the southern limit of the mineral belt had been recently incorporated into the Mount Aspiring National Park, and though it contains some of the range of ultramafic rocks and plants, it has none of the scenic grandeur of the Red Hills Range or the full range of rocks, soils, and biota.

During this period, to counter the mounting pressure from conservationists, the syndicate took in by helicopter a number of journalists from most metropolitan daily newspapers. Between February and March 1977 a number of very similar, biased articles appeared in these newspapers describing in glowing terms the

likelihood of an asbestos bonanza in the Red Hills. This unbalanced treatment by the media of such a complex issue is a breach of propriety in my opinion, involving as it did descriptions of the red rock as a "desolation" or "eyesore", pressure for wilderness as "emotional", and objectors as "weirdos".

One feature writer (a business editor) displayed his ignorance of ecological factors when he opined, "Indeed, the crushed ore waste would surely make finer material on which nature's plants could gain a foothold. There would be a two-way gain — a resource and native bush." His wish is based on a fallacy which is also common to many conservation organisations — a preoccupation with "native bush" as somehow being "good" while less obvious indigenous plant communities are neglected because they don't look as attractive.

During April 1977 the bulldozers headed down the Jackson valley once again — this time to retrieve a huge nephrite (greenstone) boulder from a beach near the mouth of the Cascade River (*Evening Post*, 18 April 1977). The operation was carried out under Forest Service supervision and since in its opinion "there would be no significant effect on the environment, no environmental assessment was prepared".¹² It considered that the effect of the sledge carrying the boulder was to "improve the condition of the track for walking access".

The whole operation received considerable publicity and further heightened public interest in the mineral belt.

Environmental impact of mining

Proponents of an asbestos mine in the Little Red Hills have often argued that the im-

pact could be localised and, with the appropriate cosmetic procedures, would have minimal impact on the physical environment. Coupled with their belief that road access will "open the wilderness up to the majority of the public", these arguments seem a superficially plausible case for mining. In reality, however, an asbestos mine would probably change the entire pattern of land use (that is, conservation) — not just in the Little Red Hills — but for most of the wild land between Jackson Bay and Fiordland National Park.

Asbestos mines are traditionally open cast and large scale; the overburden must be stripped away and redeposited somewhere — a problem in an area with an annual precipitation in excess of 5000 mm. A spokesman for Lime and Marble Ltd has admitted that road access would be necessary and that a large milling-crushing plant, with packing and baling facilities, would probably be built on the site (TV documentary, "What price asbestos?", March 1974). A town would probably have to be built at Big Bay, possibly with port facilities, or else the fibre would be trucked to Jackson Bay or further afield.

The way would be open for the formation of a Jackson-Hollyford tourist road and the type of commercial development associated with it. Apart from the inevitable physical damage to the landscape, the fragile wilderness, with its intangible values covering a much wider area, would be gone. It would be only a matter of time before noxious weeds, feral cats, and the like made their impact on the indigenous biota via the roads.

It must again be emphasised that the developments mentioned above may **not** happen if the deposit proves to be uneconomic. However, even

further prospecting could have a major impact. Modern prospecting under a prospecting licence is not just a matter of picks and shovels; it can involve drilling, trenching, and blasting. This has been alluded to by the Commissioner for the Environment, who has pointed out that "it is possible that prospecting will have to be on a larger scale before it is established whether or not the area will support a viable mining venture. If results are promising, it is likely that trenching with bulldozers may be required."¹⁰ Since the use of bulldozers for prospecting is not allowed under the current warrant, "should the company wish to undertake work with bulldozers, these conditions will need to be reviewed".¹⁰

These are some of the impacts which must be weighed up in the final decision on whether to mine or not. The whole question of the value of asbestos to our industry and social environment is now a matter of considerable debate. The health hazard of asbestos fibre as the cause of asbestosis and, more recently, as a cause of lung and stomach cancer has received considerable publicity in recent years (*Evening Post*, 29 April 1976).

Exploitation under Mining Act

Unfortunately, the Red Mountain ultramafic belt has the lowest status for protection under the Mining Act. The term "unoccupied Crown land" is an anachronism, a hangover from the days of pastoral settlement. Unfortunately, the Department of Lands and Survey has never tried to give the belt reserve status, for it would probably have been opposed by Geological Survey (D.S.I.R.) and the Mines Department. Though most of the prospecting licences were granted before the new Mining

Act in 1971, they will soon be coming up for renewal, and it is critical that appropriate conditions be applied by Government at that stage. The fundamental weakness of the Mining Act (pointed out to Government in 1971 to no avail by most conservation organisations) is the provision whereby a **prospecting licence** can be automatically exchanged for a **mining licence**; consequently, all conditions need to be applied at the stage where the prospecting licence is granted. For unoccupied Crown land such as the Red Hills the Minister of Lands is not even entitled to object to the Minister of Mines over the lack of environmental safeguards in any mining licence.

Clearly, by modern environmental standards the lack of official safeguards and appeal procedures, should the consortium wish to mine, is scandalous. The Minister for the Environment has recently promised to try to have the of-

fending section of the Mining Act amended — but only for national parks, where conditions **could** be applied at the mining licence stage. If the Red Mountain region were declared a national park, it would still be possible to mine it under the provisions of the Mining Act; if mining did eventuate, the chances of regulating it through its national park (or appropriate reserve) status would be so much greater.

Case for national park status

On the basis of proposals developed during 1969-70 by the Massey University Alpine Club, F.M.C. in 1971 submitted a documented proposal (including extensive photographic coverage) to the Mount Aspiring National Park Board for the inclusion of about 75 000 hectares on the western boundary of the park (see map). The proposed extension

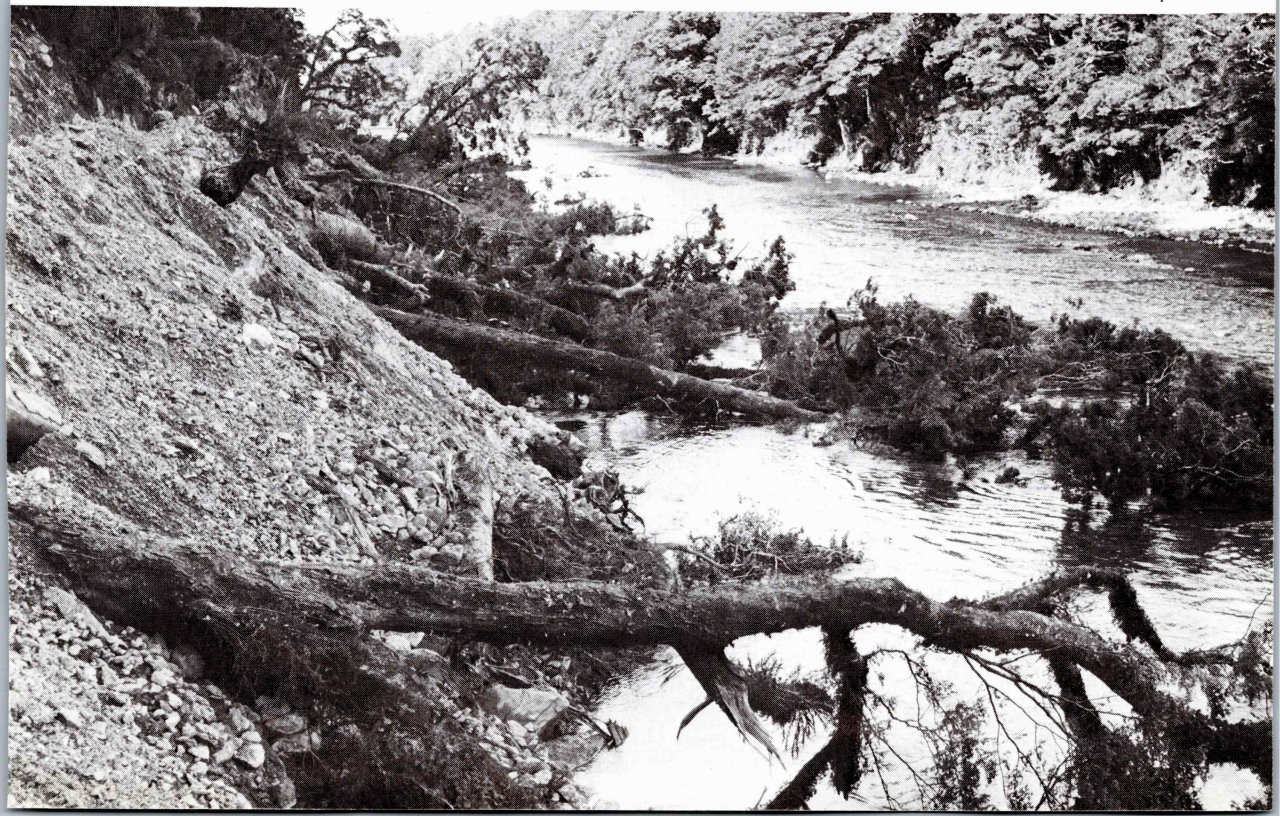
fell into three physiographic categories:

1. **The southern zone**, including the sedimentary rocks and gabbros of the Bryneira Range and the country drained by the Olivine, Diorite, and Barrier Rivers. The western boundary was the low-lying, swampy floor of the Pyke River.
2. **The ultramafic belt**, including the Little Red Hills and the Red Hill Range, but excluding the Raddle Peak group; the country drained by the upper Pyke River and Red Pyke River, with Durward Creek and the Alpine Fault forming the western boundary.
3. **The northern zone** of the northern Olivine Range south of Falls Stream; the schist country lying between the Arawata and Cascade Rivers.

The proposed addition was inspected by the board's ranger staff and planning committee,

Damage caused by Westland County Council's roading contractors in the Jackson valley (March 1973).

Arnold Heine photo





Pete Lusk photo

Portal of a mining adit on the Little Red Hills (January 1974).

who in May 1973 submitted the proposal, with their support, to the full board. The board accepted that the area was of national park quality and urged the National Parks Authority to begin high-level discussions to resolve the resource conflict.

The board's intentions were publicly opposed by the current chairman of Lakes County Council, Mr T. J. Thomson, who had recently resigned from the Mount Aspiring Park Board after the Minister of Lands had invoked section 117 of the Lands Act 1948 to acquire 11 000 hectares of his Mount Earnslaw station lease for inclusion in the park (*Southland Times*, 12 July 1973). For 10 years F.M.C. had patiently urged that the Forbes Range and the striking double peak of Mount Earnslaw at the head of Lake Wakatipu be added to the park. Negotiations with Mr Thomson failed, and the Minister of Lands, Mr Rata, to his credit, acted in the public interest.

The Lakes County Council and Mr Thomson continued to voice opposition publicly to any extension of the Mount Aspiring National Park into the ultramafic area and, in-

deed, did their utmost to have a road through the Greenstone valley and a Jackson-Hollyford road link constructed. The Mount Aspiring Park Board were forced to modify their position into one of "acknowledging the national park quality of the Red Hills", but resigning themselves to the pious hope that "when mining is completed the area would still be suitable for future national park purposes" (*Otago Daily Times*, 10 October 1973).

The response of the National Parks Authority to the proposals of the Mount Aspiring National Park Board for conservation of the Red Mountain region has been very low key. The Authority has made no public statement acknowledging the potential national park value of the area, but it is believed that it also considers the area to warrant national park status — "once the mining question is resolved".

Late in 1976 the Minister for the Environment, Mr Venn Young, appointed Mr T. J. Thomson to the Environmental Council.

The hopes of the county council for the realisation of its dream of a network of tourist

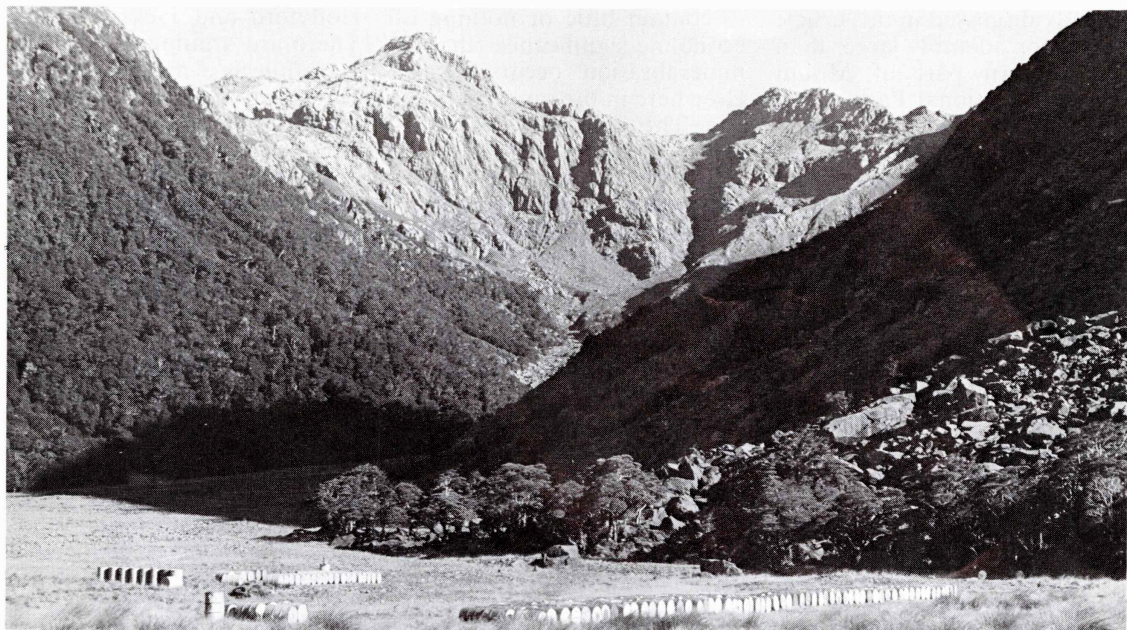
roads throughout the region diminished as the economic situation deteriorated during 1975-76. The National Parks Authority and F.M.C. had won a holding action against the Lakes County Council on the Greenstone valley through the Town and Country Planning Appeal Board in September 1973. At the instigation of the Southland Progress League a Southern Lakes Roothing Committee, representing most points of view in the conflict, was set up in 1976. Planning assistance for its study was provided by the Department of Lands and Survey, and in February 1977 the committee came to the following sound conclusions:

1. Sealing of existing roads such as Milford, Haast Pass, and Lindis Pass was to be given highest priority.
2. Second priority was the Kinlock-Mount Nicholas link connecting with the existing Von-Oreti road.
3. Investigation of a car ferry route across Lake Wakatipu to Mount Nicholas.
4. The Greenstone and Caples valleys to be retained in their natural state as walking routes.

It was significant that the committee considered it inappropriate to indicate a priority for a Hollyford-Jackson road.

"Cascade Forest Park" — a western buffer?

Concurrently with the national park proposals F.M.C. had urged the Forest Service to designate the bulk of Martins Bay State Forest, Cascade State Forest, and Arawata State Forest as a forest park¹³. This area of over 140 000 hectares is heavily bush-covered morainic country between the Alpine Fault and the Tasman Sea. The major features are (from south to north): the Skippers Range, Big Bay,



Pete Lusk photo

A view up Red Stream (site of a mining camp), from the upper Barrier airstrip. Ultramafic scree is in the foreground.

McKenzie Range, all the terrace country drained by the Gorge, Jerry, and Spoon Rivers, the Hope-Blue Range, the lower Cascade valley, Cascade Plateau, the Olivine Range north of Falls Creek, the Jackson valley, the Stafford Range, and the Arawata River below the Waipara River. This is splendid tramping country containing what is possibly the last stretch of negotiable coastline in Westland which is not divorced from its mountainous hinterland by a road.

Further, the forest park would include Lake Ellery and the old Polish settlement on the Smoothwater River. The former town of Jackson Bay deserves restoration and preservation as a pioneer settlement of major historical interest. Then there is the "Cascade Road", surveyed by Douglas and Mueller, and built by hand in the 1890s. Some of it on Martyr Spur was destroyed by the bulldozer vandalism in 1973, but most of it remains in the Cascade val-

ley 2 m wide and overgrown, but nicely constructed, cambered, and with stone drains, for many miles up the Cascade valley. These things can be appreciated only on foot, not through clouds of dust on a rapid motorised journey.

In July 1976 the Forest Service (Southland Conservancy) produced an interesting report on Martins Bay State Forest¹⁴. The report highlighted the potential conflict of roading and mining ventures with existing forest values. The Forest Service recommended that Cascade State Forest should be transferred to Southland Conservancy so that it could be managed jointly with Martins Bay State Forest. Furthermore, it recommended that the unoccupied Crown land containing the ultramafic belt should meanwhile be transferred to State forest, which would give it some protection in terms of the Mining Act, yet still leave the way open for transfer to the Mount Aspiring National Park

"once the mining issue is resolved".

Both the Department of Lands and Survey and the Forest Service accept the need to manage national and forest parks in a complementary fashion. Each type of park has its values — the former for the preservation of outstanding landscapes and biota, the latter for multiple use of the natural resources, especially types of recreation. With good will there is ample opportunity to extend Mount Aspiring National Park and at the same time create an outstanding forest park which could act as a highly desirable buffer to the interior wilderness.

Wilderness area

Federated Mountain Clubs have proposed an "Olivine Wilderness Area"¹³ on the western margin of the existing Mount Aspiring National Park, an area acknowledged as one of the outstanding alpine wildernesses in New Zealand.¹⁵ It includes many of the areas

already discussed in this article and is considerably larger than the western part of Mount Aspiring National Park which the board would like to gazette as wilderness. To be viable the Olivine Wilderness needs to include the rugged areas in the upper Barrier, Pyke, and Cascade — those areas which are currently under threat; furthermore, it needs the buffer of "Cascade Forest Park".

Our wilderness resource has recently diminished¹⁵ — all through commercial exploitation for timber, minerals, or water. Recently, the growing "back-country boom" of outdoor recreation and saturation development of **ground** facilities for noxious animal control have eliminated much of our wilderness, just as the noxious animals have severely modified it. Federated Mountain Clubs have recently proposed 16 major areas for wilderness status¹⁶: one of these is the Olivine Wilderness, which would include much of the ultramafic belt within an enlarged Mount Aspiring National Park. There is nothing really new in this proposal, just a belated recognition of the status quo — a wilderness that has existed up until now and still managed to attract the prospector, mountaineer, and naturalist.

Scientific value

Ultramafic regions are a world-wide scientific curiosity; they are scattered around the Pacific Ocean and a number of small areas are in New Zealand. However, no **major** ultramafic zone is preserved in New Zealand either as a scientific reserve or national park. On scenic grounds Red Mountain is the most outstanding of our ultramafic regions; on scientific grounds it also warrants preservation for the following reasons¹⁷.

1. Geologically, Red Mountain is a magnificent exposure of an ultramafic belt. It appears

to contain little or nothing of economic significance (though mineralisation occurs locally elsewhere in the same belt).

2. The area provides interesting opportunities to study soil development on highly basic parent materials. Furthermore, soil development in such a superhumid climate can be contrasted with soil development on the same parent material in warmer climates (for example, Dun Mountain, Nelson).

3. Entomologically, the ultramafic area probably forms a barrier between Fiordland and Westland faunas. Because of its harsh environment most scientific interest would lie in the colonisation of such a virgin area and adaptation by pioneer species.

4. Botanically, Red Mountain provides a unique example of indigenous vegetative response, since Pleistocene glaciation, to ultramafic soils over a wide altitudinal range. Such floras are likely to show genetic adaptation to this unusual environment.

For the above reasons the D.S.I.R.-University of Otago scientific party recommended that Red Mountain and its adjacent geological contacts (excluding Little Red Hill) warranted national park status¹⁷.

The future

The future of the Red Mountain region is in the balance. By the time this article is published the syndicate may have announced its intention to apply for a mining licence. "National park or asbestos mine?" is a question that all concerned New Zealanders are going to have to ponder. The present limbo-like situation must be resolved or else the way will remain open for a continuance of traditional piecemeal developments, characterised by the prospecting and past extensions of the

Hollyford and Jackson roads. There are arguments for **conservation** as a mix of national park-forest park or for **development** of minerals and tourism.

Government will certainly play a major role in this future, since it is the sole landowner; furthermore, I believe that Government is now much more sensitive to the views of New Zealanders who want to see most of their natural heritage preserved, but that concern needs to be forcefully expressed and directed to specific objectives. Unfortunately, most readers of this article will never set foot on Red Mountain or any of its associated ultramafic area; it is just too remote for that to be practical. Nevertheless, a concerned citizen can enthusiastically associate himself with a move to conserve this region, since I emphatically reject the notion that an individual's opinion on a resource conservation issue is not valid unless he has "been there".

Yet, clearly, there is no unanimity within Government. An indication of this lack of agreement is to be found in the joint Lands and Survey-Forest Service land use study of South Westland, just released by the Minister for Lands, Forests, and the Environment.¹⁷ The future tenure of the Red Mountain region was the one major part of the report where the two team leaders (one from each department) could not agree.

The Lands and Survey co-ordinator believed that the scenic, scientific, and recreational values were so outstanding that it was appropriate for the area to be placed within Mount Aspiring National Park. Though the Forest Service co-ordinator also acknowledged the outstanding values of the region, he considered that adequate protection could

be afforded under the provisions of the Forests Act as part of a State forest park¹⁷ embracing most of the country to the west of the existing national park.

I do not agree with the latter view, since the values of the Red Mountain region are **so outstanding** that they deserve preservation for all time (regardless of any commercial value of minerals). However, I would like to commend the two authors of this report for their initiative in putting forward some definite tenure prescriptions, rather than vague "preferred land use" type of recommendations that the public have come to expect as the norm from Government in this type of resource management conflict.

The South Westland report is now public, and all individuals and organisations have the opportunity to express their opinions to the Minister on its contents. The future of Red Mountain depends, in part, on this public response.

Conclusions

The history of man's activity in the Red Hills is long and complicated; it needs a book to do it full justice, for I have had to leave out many parts of the story. However, from what I have outlined the following conclusions can be drawn:

1. The Red Mountain region is an outstanding scenic landscape. It is also scientifically unique and at present is largely an unspoilt wilderness.
2. With the forests to the west, and the coastline between Jackson Bay and Martins

Bay, the region offers a wide range of outdoor recreation opportunities.

3. The whole region is at risk from piecemeal development, particularly from mineral prospecting and roading for tourism.
4. A comprehensive conservation study is needed to prescribe the best land use, including preservation of some of the region as national park or reserve; the multiple use of the lowland-coastal area as forest park; and the provision of compatible recreation and historic interpretation facilities.
5. Development of the region for mining or tourist roading will eliminate or severely modify the existing values outlined in conclusion 1 above.

In many ways the story of the conservation of the Red Mountain ultramafic belt is just beginning. The issue is becoming clearer and it is obviously time that the conservation movement mounted a concerted effort to have the outstanding values of the region acknowledged by Government and industry.

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